

dilatato. *Elytra* prothorace multo latiora. *Femora* infra dentata. *Abdomen* segmento primo recto.

In all these characters this genus differs from *Compsus*, *Eustales*, and their allies. The anterior tibiæ are produced at the apex, but not into a naked mucro, as in *Compsus*; and in this respect it agrees with *Platyonus*.

Clavoteges virosus.

C. ovatus, squamis fuscis approximatis, aliis in maculis adpersis parvis viridibus, tectus; scutello majusculo, transverso. Long. $5\frac{1}{2}$ lin.

Hab. Chontales.

Ovate, covered with approximate brownish scales, much darker on the back, and on which are a few small scattered pure green spots; the sides, legs, and under surface more or less obscurely blotched with pale brown and green; rostrum flattish above, the sides between the eye and the beginning of the scrobe bent down at an angle; antennæ with a rather short funicle, greenish, the club dark; prothorax narrow anteriorly, rounded at the sides, the basal portion suddenly expanded at the sides against the elytra, the disk coarsely granulate; scutellum rather large, transverse; elytra flattish above, raised on each side of the scutellum, transversely punctured, the interstices, except the third, scarcely raised, the third terminating abruptly at the deflexed portion in a short compressed gibbosity, below which is another, but smaller, on the fifth interstice, the apices mucronate at the suture.

BIBLIOGRAPHICAL NOTICES.

The Geological Antiquity of Insects.—*Twelve Papers on Fossil Entomology.* By HERBERT Goss, F.L.S. 8vo. London: Van Voorst, 1880.

THE subject of Fossil Entomology is certainly one which has not attracted many investigators. In this country scarcely any one hitherto seems to have devoted any continuous attention to fossil insects; and even on the continent the students of insect-remains are so few that the more important of them might almost be counted on the fingers of one hand. This is due, no doubt, to a considerable extent, to the fact that the occurrence of fossil insects is exceedingly sporadic: beds containing such objects occur only here and there; and when they turn up in quantity, the specimens obtained

generally fall into the hands of some one person who undertakes to work out the whole series. Mr. Goss, in his pamphlet now before us, suggests as another cause for the limited amount of interest shown in fossil insects, that very few geologists are capable of forming opinions upon even the general relationships of such fragments of insects as are usually met with in a fossil state. We should be inclined to go even a step further and say that there are very few entomologists, at all events in England, at all qualified by the breadth of their previous studies to undertake with profit this line of investigation.

Nevertheless, especially in view of the great addition to our knowledge of the insect-fauna of the past which recent researches in America seem to promise, it must be admitted that the study of fossil insects ought to be one of primary importance, particularly with regard to the question of the succession of organisms on the face of the earth. There can be little doubt that, if ever the theory of evolution is to be definitively established or disproved from the study of existing forms of animals, it is to the insects that we shall have to turn our special attention; and from this point of view the careful study of fossil insects and their comparison with those now living must also be of the highest importance.

Under these circumstances, we think that English entomologists and geologists have every reason to be grateful to Mr. Goss for having reprinted, in the form of a pamphlet, a series of twelve articles which he has lately contributed to the 'Entomologist's Monthly Magazine.' Without pretending to go very deeply into the subject, Mr. Goss has here given an excellent sketch of the constitution of the successive insect-faunas of the different geological formations, so far as they are at present known. For the purposes of the general palæontologist the information here carefully brought together by Mr. Goss will be of great value, and in many cases quite sufficient without any supplementary investigations; but for the service of those who may wish to carry their study of the subject, or any part of it, somewhat further, the author has carefully given references to the works from which his details are derived; and these, we believe, embrace, if not the whole, very nearly the whole of the published literature of fossil entomology. Future students will be much indebted to the industry of Mr. Goss for the valuable summary of this literature which he has thus produced.

Journal of the Royal Microscopical Society. Vol. ii. nos. 4 to 7 and 7 a, for June to December 1879. Svo. Williams and Norgate, London.

THIS publication includes the Transactions and Proceedings of the Society, and a vast amount of information relative to Invertebrate and Cryptogamic organisms, and to Embryology, Histology, and Microscopy, as gathered from other publications at home and abroad. The enthusiastic Editor, Frank Crisp, LL.B. &c., has now associated with himself, in the work of translating, compiling,

and editing, other accomplished and energetic Fellows of the Royal Microscopical Society, namely T. Jeffery Parker, B.Sc., A. W. Bennett, M.A., B.Sc., and F. Jeffrey Bell, B.A.; and the results of their combined work continue to be scientifically good and of great value to the Society to which they belong, and to the scientific world in general.

The original communications to the Society, upwards of forty in number, contain many excellent natural-history notes and memoirs, mostly illustrated, besides those in which the Microscope itself is the more important subject.

Proceedings of the Yorkshire Geological and Polytechnic Society.

New Series, vol. vii. part 2, pp. 107-218, with 7 plates. Edited by J. W. DAVIS, F.S.A., F.G.S., &c. Svo. Leeds, 1879.

THIS latest publication of the long-established scientific Society of the West Riding of Yorkshire bears witness to its vitality and the intellectual activity of its Members. Mr. W. Morrison's address, short as it is, is strong in sensible remarks on the ill effects that "cramming" and prize-getting have on modern education, in which work is not done for the work's sake, but for some material end and self-aggrandizement. Local geology has many useful illustrations among the papers in this Part of the Proceedings, ranging from the coal-fields to the glacial phenomena of Yorkshire; and some of the papers, though treating of local facts, have philosophical bearings of wide application—such, for instance, as the Rev. E. M. Cole's paper on the origin and formation of the Wold Dales. For Natural History we find interesting and new matter detailed by Messrs. Cash and Hick in their communication on Fossil Fungi (pl. vi.) from the Coal-measures; and to the Cryptogams they refer Carruthers's *Traquairia*, also from the Halifax coal. Mr. J. W. Davis describes (without figures) some new Carboniferous fish-remains as *Ostracacanthus dilatatus*, which he thinks has strong Teleostean affinities. A summary of the geological literature relating to Yorkshire which has been published in 1877-78, the Minutes of Meetings (comprising a notice of Raygill Cave), the Report, and some miscellaneous matter complete this useful No. of the Proceedings.

MISCELLANEOUS.

On the Formation of the Shell in the Snails.

By MM. LONGE and E. MER.

THE shell of the *Helices* consists of two principal layers, of organic and mineral nature, clothed with a cuticle which is wholly organic. The first of these layers is composed, commencing exteriorly, of a structure showing confused striation, of about the same thickness as the cuticle, and of another thicker one formed of vertical prisms.